CLAIMS

What is claimed is:

1. An optical cavity, comprising:

a first a non-concave reflector positioned at a first end of the optical cavity, the reflector being configured to focus light that reflects off of the reflector back upon itself to avoid diffraction losses from the optical cavity; and

a second non-concave reflector positioned at a second end of the optical cavity that receives and reflects light reflected from the first non-concave reflector.

2. The optical cavity of claim 1, wherein the first non-concave reflector includes an outer layer of material that has a thickness that varies as a function of radial distance out from an axial center of the outer layer.

3. The optical cavity of claim 2, wherein the outer layer includes a substantially convex, semispherical outer surface and a substantially planar inner surface.

4. The optical cavity of claim 1, wherein the first non-concave reflector includes an outer layer of material that has an index of refraction that varies as a function of radial distance out from an axial center of the outer layer.

5. The optical cavity of claim 4, wherein the outer layer is substantially planar.

6. The optical cavity of claim 1, wherein the reflectors include a plurality of material layers oriented in a stacked arrangement.

7. The optical cavity of claim 6, wherein the material layers have different indices of refraction than adjacent material layers.

8. The optical cavity of claim 6, wherein the material layers have quarter wave optical thicknesses.

9. An optical cavity, comprising:

first non-concave means for reflecting light at a first end of the optical cavity, the first non-concave means for reflecting light including means for focusing the light that reflects off of the first non-concave means for reflecting light so that diffraction losses from the optical cavity are reduced; and

second non-concave means for reflecting light at a second end of the optical cavity that receives and reflects light reflected from the first non-concave means for reflecting light.

10. The optical cavity of claim 9, wherein the first non-concave means for reflecting light includes an outer layer of material that has a thickness that varies as a function of radial distance out from an axial center of the outer layer.

11. The optical cavity of claim 10, wherein the outer layer includes a substantially convex, semispherical outer surface and a substantially planar inner surface.

12. The optical cavity of claim 9, wherein the first non-concave means for reflecting light includes an outer layer of material that has an index of refraction that varies as a function of radial distance out from an axial center of the outer layer.

13. The optical cavity of claim 12, wherein the outer layer is substantially planar.

14. The optical cavity of claim 9, wherein the means for reflecting light at the first and second ends of the cavity include a plurality of material layers oriented in a stacked arrangement.

15. The optical cavity of claim 14, wherein the material layers have different indices of refraction than adjacent material layers.

16. The optical cavity of claim 14, wherein the material layers have quarter wave optical thicknesses.

17. An optical device, comprising:

an optical cavity including:

a first reflector positioned at a first end of the optical cavity, the first reflector including a layer of material having a thickness that varies as a function of radial distance out from an axial center of the layer such that the first reflector is configured to focus light that reflects off of the first reflector to avoid diffraction losses from the optical cavity; and

a second reflector positioned at a second end of the optical cavity that receives and reflects light reflected from the first reflector.

18. The optical cavity of claim 17, wherein the outer layer includes a substantially convex, semispherical outer surface and a substantially planar inner surface.

19. An optical device, comprising:

an optical cavity including:

a first reflector positioned at a first end of the optical cavity, the first reflector including a layer of material that has an index of refraction that varies as a function of radial distance out from an axial center of the layer such that the first reflector is configured to focus light that reflects off of the first reflector to avoid diffraction losses from the optical cavity; and

a second reflector positioned at a second end of the optical cavity that receives and reflects light reflected from the first reflector.

20. The optical cavity of claim 4, wherein the outer layer is substantially planar.

21. A method for manipulating light in an optical device, comprising:

reflecting light between two reflectors of an optical cavity of the optical device; and

focusing the light with a layer of material having a thickness that varies as a function of radial distance out from an axial center of the layer to reduce diffraction losses.

22. A method for manipulating light in an optical device, comprising:

reflecting light between two reflectors of an optical cavity of the optical device; and

focusing the light with a layer of material having an index of refraction that varies as a function of radial distance out from an axial center of the layer to reduce diffraction losses.

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